

===== WPI =====

- TI - Internal combustion engine with turbo supercharger for supercharging of intake - has control unit which controls variable valve timing unit to control opening of intake valve when value measured by rotation detected is lower than predetermined value
- AB - J10288056 The engine comprises a variable valve timing unit (11) that varies opening and closing time of an intake valve (5). The variable valve timing unit is controlled by a control unit (12). A turbo supercharger supercharges the exhaust from a turbine (9) to drive a compressor (10). A rotation detector (15) detects the rotating speed.
- The control unit controls the variable valve timing units to open the intake valve when the detected value of the rotation detector is lower than a predetermined value. The piston is then displaced from the top dead centre to the bottom dead centre during the charging stroke.
 - ADVANTAGE - Increases energy of exhaust steam. Reduces turbo lag. Enhances output of engine.
 - (Dwg.1/7)
- PN - JP10288056 A 19981027 DW199902 F02D23/00 006pp
- PR - JP19970097644 19970415
- PA - (NIJI) NIPPON JIDOSHA BUHIN SOGO
(TOYT) TOYOTA JIDOSHA KK
- MC - X22-A03C X22-A03G X22-A20C
- DC - Q52 X22
- IC - F02B37/00 ; F02D13/02 ; F02D23/00
- AN - 1999-018690 [02]

===== PAJ =====

- TI - INTERNAL COMBUSTION ENGINE WITH TURBO SUPERCHARGER
- AB - PROBLEM TO BE SOLVED: To increase engine output while reducing turbo lag.
- SOLUTION: A time at which an air intake valve 5 opens is changed from during an air intake process to an exhaust process as an engine speed is increased. Because a kinetic energy can be given more to the air intake than to an engine at the suction of air intake, the exhaust gas energy can be increased. As a result, because a force to drive a turbine 9 becomes large, an engine output can be increased while reducing a turbo lag.
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- PA - NIPPON SOKEN INC; TOYOTA MOTOR CORP
- IN - WAKIMOTO TORU; OKI HISASHI
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